

The ICVR Prospective AAA Project - IPAP

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ICVR EVAR device performance study



Aim:

- To compile large-scale registry-based data on device performance in AAA repair in contemporary practice

Rationale:

- International registry-based collaboration offers a unique opportunity for large datasets capturing rare events



Variations in Abdominal Aortic Aneurysm Care

A Report From the International Consortium of Vascular Registries

Editorial, see p 1959

BACKGROUND: This project by the ICVR (International Consortium of Vascular Registries), a collaboration of 11 vascular surgical quality registries, was designed to evaluate international variation in the contemporary management of abdominal aortic aneurysm (AAA) with relation to recommended treatment guidelines from the Society for Vascular Surgery and the European Society for Vascular Surgery.

METHODS: Registry data for open and endovascular AAA repair (EVAR) during 2010 to 2013 were collected from 11 countries. Variations in patient selection and treatment were compared across countries and across centers within countries.

RESULTS: Among 51 153 patients, 86% were treated for intact AAA (AAA) and 14% for ruptured AAA. Women constituted 18% of the entire cohort (range, 12% in Switzerland–21% in the United States; $P<0.01$). Intact AAAs were repaired at diameters smaller than recommended by guidelines in 31% of men (<5.5 cm; range, 6% in Iceland–41% in Germany; $P<0.01$) and 12% of women with iAAA (<5 cm; range, 0% in Iceland–16% in the United States; $P<0.01$). Overall, use of EVAR for iAAA varied from 28% in Hungary to 79% in the United States ($P<0.01$) and for ruptured AAA from 5% in Denmark to 52% in the United States ($P<0.01$). In addition to the between-country variations, significant variations were present between centers in each country in terms of EVAR use and rate of small AAA repair. Countries that more frequently treated small AAAs tended to use EVAR more frequently (trend: correlation coefficient, 0.51; $P=0.14$). Octogenarians made up 23% of all patients, ranging from 12% in Hungary to 29% in Australia ($P<0.01$). In countries with a fee-for-service reimbursement system (Australia, Germany, Switzerland, and the United States), the proportions of small AAA (33%) and octogenarians undergoing iAAA repair (25%) were higher compared with countries with a population-based reimbursement model (small AAA repair, 16%; octogenarians, 18%; $P<0.01$). In general, center-level variation within countries in the management of AAA was as important as variation between countries.

CONCLUSIONS: Despite homogeneous guidelines from professional societies, significant variation exists in the management of AAA, most notably for iAAA diameter at repair, use of EVAR, and the treatment of elderly patients. ICVR provides an opportunity to study treatment variation across countries and to encourage optimal practice by sharing these results.

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Sources of Funding, see page 1956

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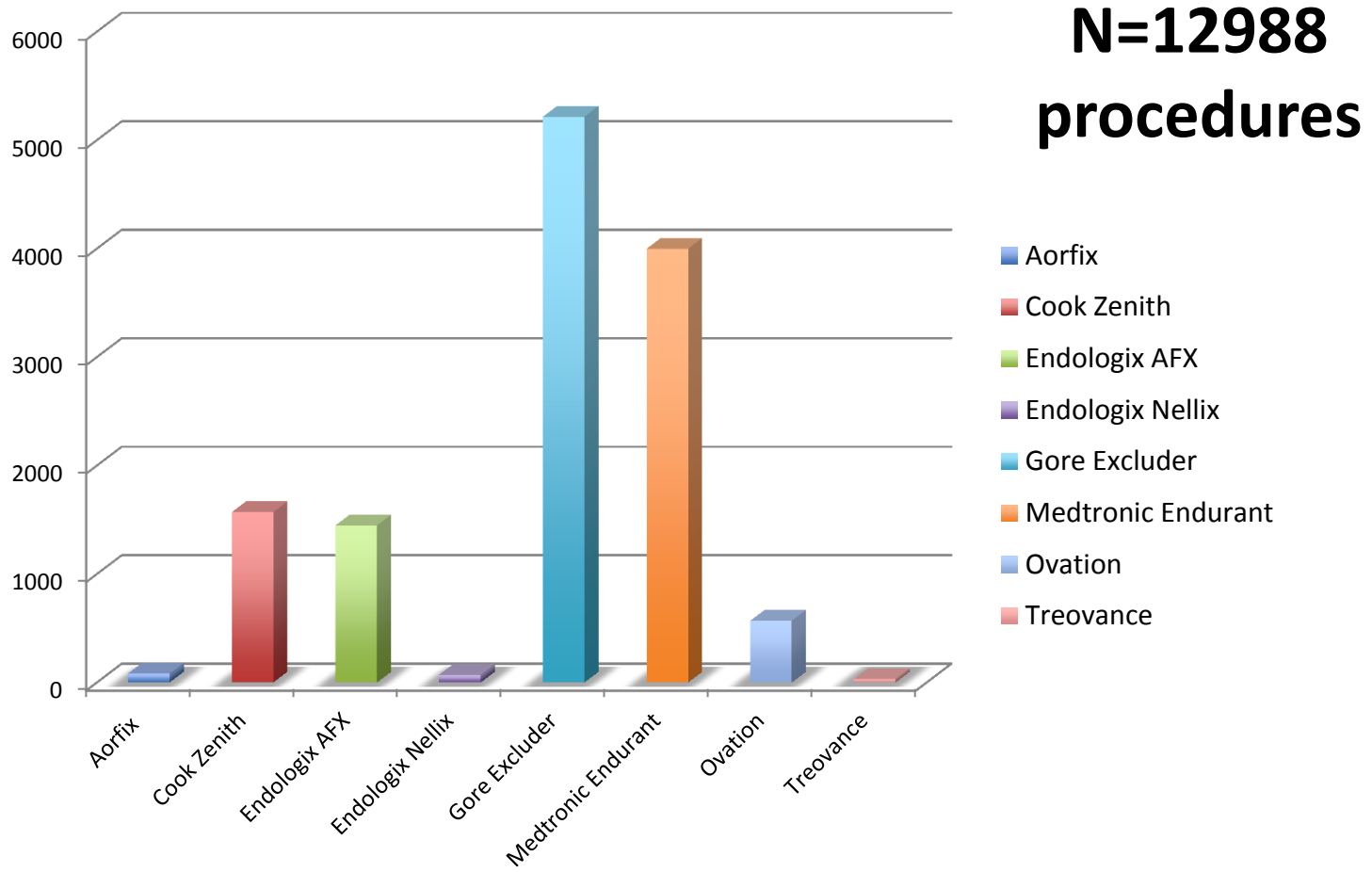
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Study design

- Registry-based data collection on EVAR procedures
- Minimum data-set including
 - Patient characteristics
 - Basic anatomic variables
 - Device description
- Two-years follow-up, with identification of key EVAR-related failures

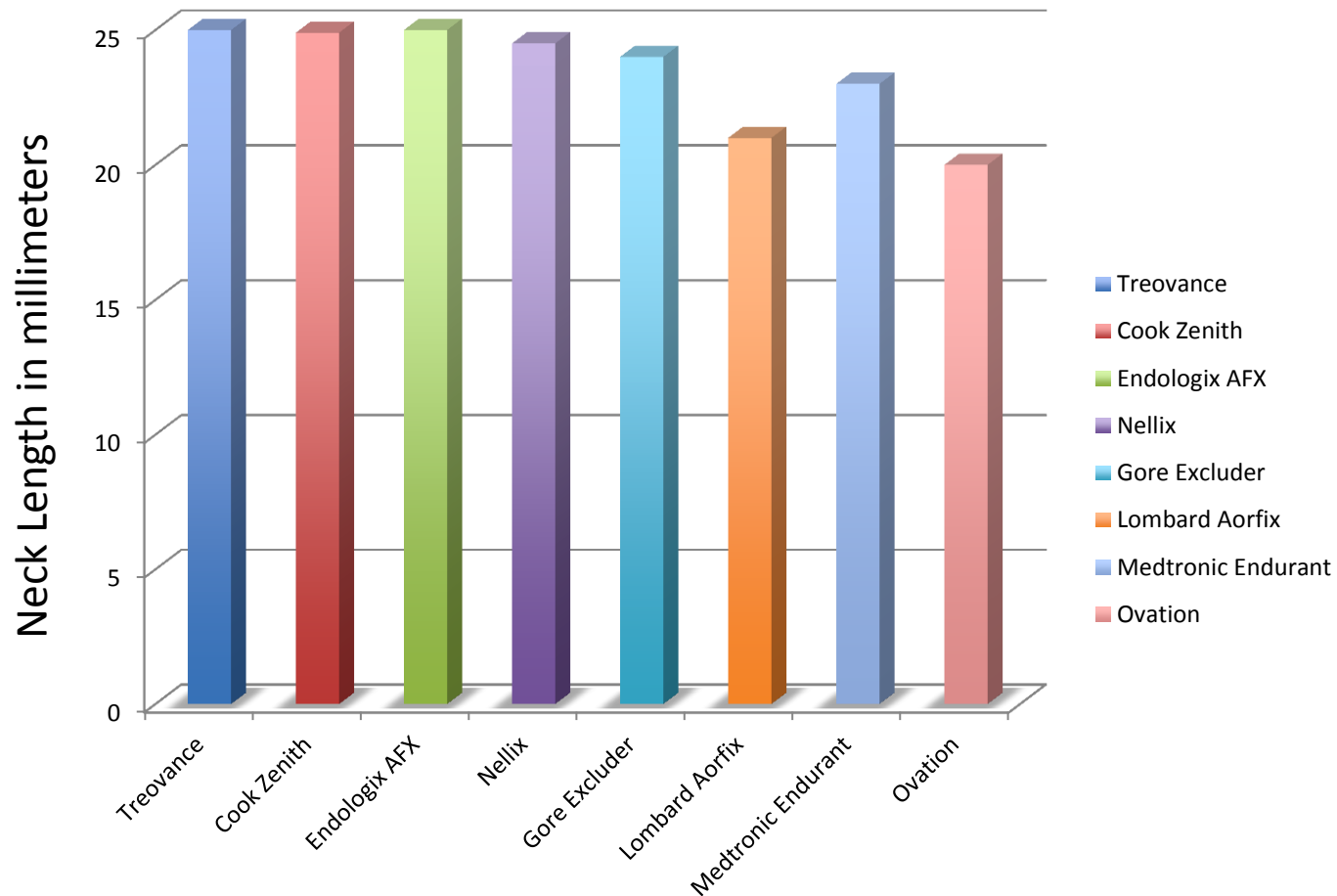
Variation in VQI

All EVAR Device Make Market Share

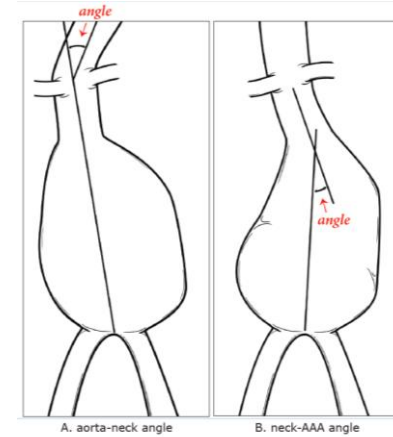
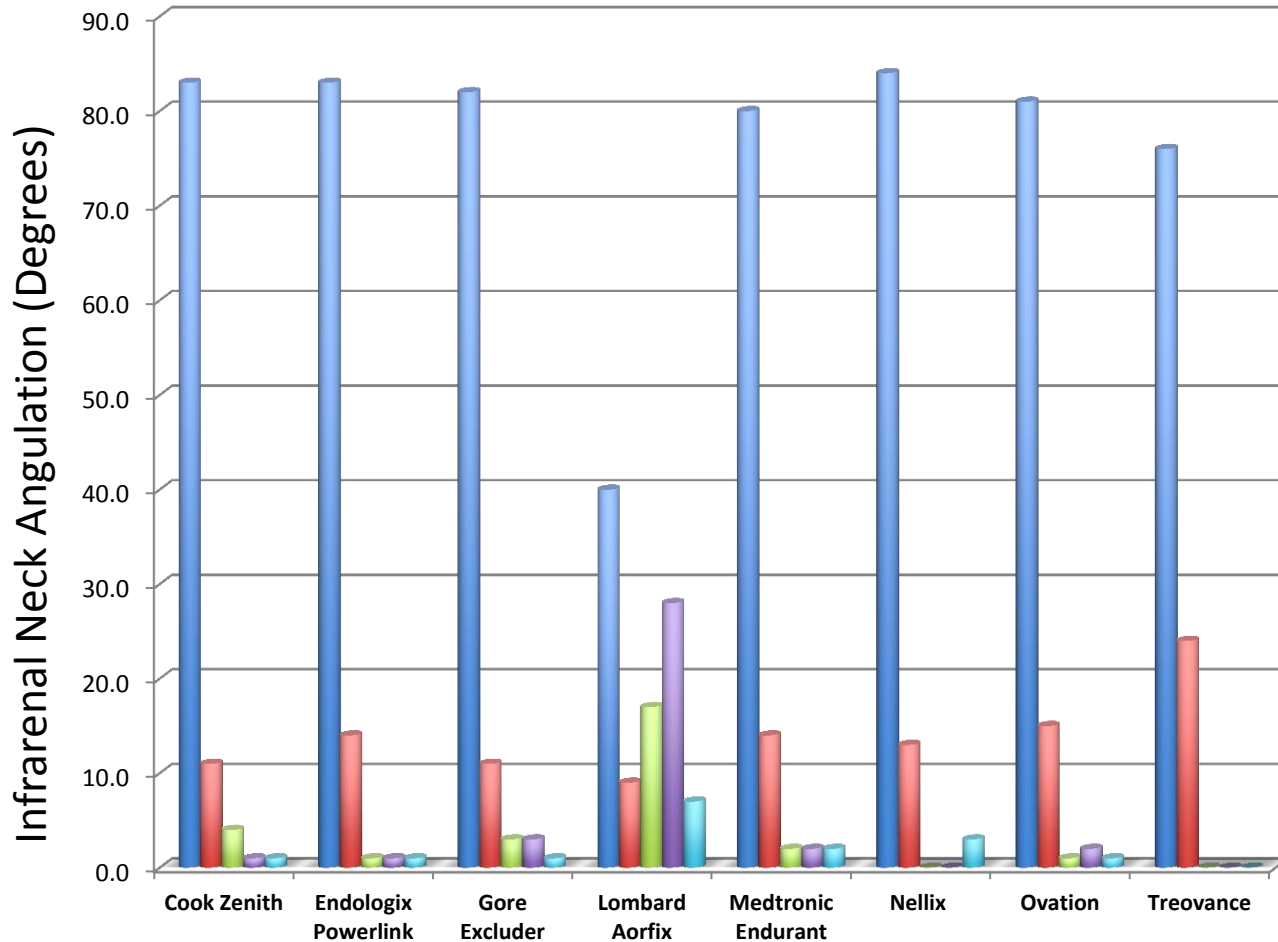


Variation in VQI

Aortic Neck Length by Device



Variation in VQI Neck Angulation



- <45
- 45-60
- 61-75
- 76-90
- >90

Data collection – minimum dataset

Demographics
Age
Gender
Intact
Cardiac ds
Pulmonary ds
Cerebrovascular disease
Preoperative creatinine

Aorta-specific data
Neck diameter (outer to outer)
Neck length
Neck angulation
AAA diameter
Indication (AAA, IAA, Both)

Procedure specific
Proximal device manufacturer and model
R iliac device (s) manufacturer and model
L iliac device(s) manufacturer and model
Unintentional branch vessel loss
Adjunct procedures (access-related, renal artery stenting, other)

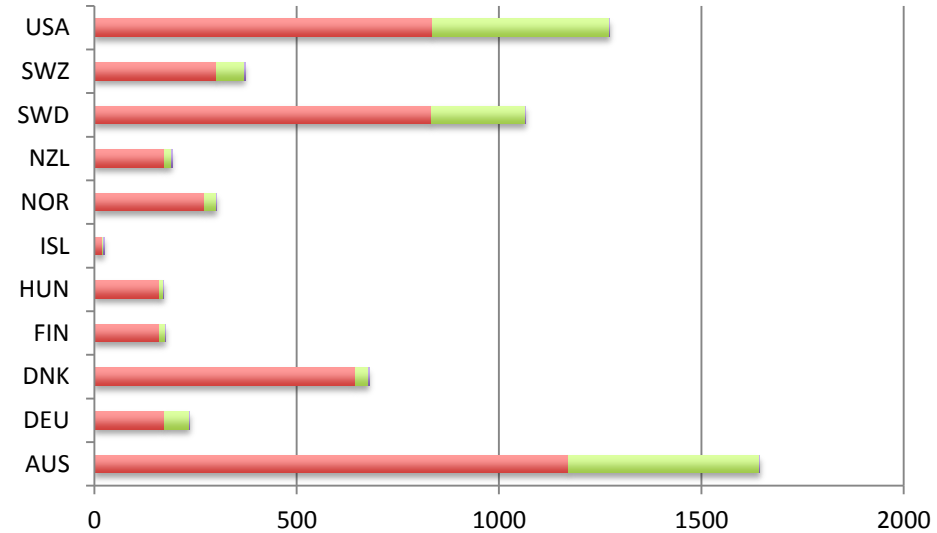
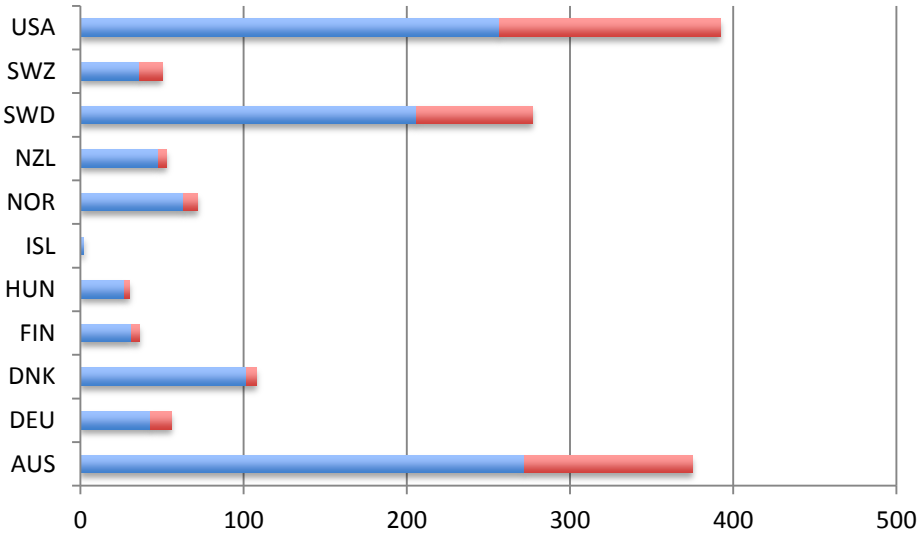
Follow-up data collection

30-days
Date of Death
Reintervention, if yes define indication, type and time in days from primary surgery
Perioperative complication, if yes select what complication from a predefined list
1-year
Date of Death
Reintervention, if yes define indication, type and time in days from primary surgery
2-years
Date of Death
Reintervention, if yes define indication, type and time in days from primary surgery

Variation in ICVR Rupture treated with EVAR

Female

Male



Number of
patients

IPAP Study Discussion

- Rupture only study initially?
 - Group was supportive of rupture as initial focus of prospective study
- Can we combine ICVR data and claims data to get longer-term data
 - Which countries have claims data available?
 - Will focus on in-hospital data initially.

IPAP Timeline?

- Most registries have indicated interest to participate in IPAP
- Finalization of data collection sheets and initiation of study, likely 2018
- Center-based or national-based data collection possible

Aim to initiate study, with first round of
"early adapter" registries
Which registries are ready?

Other Prospective Projects?

- TEVAR for Dissection
- Elective EVAR/Open AAA
- Elective EVAR anatomic analysis (US, Finland, Denmark and Hungary ready; Sweden ready 2018)

Retrospective AAA Projects

- Volume-outcome relationship for rupture/elective AAA repair (EVAR and open)
- Gender analysis (anatomic with outcomes)
- Age/Aneurysm size/Outcome analysis
- **2010-2013 data will be used for initial analysis regarding rupture**